Abstract

The study was conducted at National Corn and Sorghum Research Center. The factorial experiment was designed at randomized complete block design with three replications. The treatments consisted of three varieties (line 1, line 2 and line 3) and three harvest times (7 months, 9 months and 11 months). Plant growth and rhizome of Plai were recorded. Volatile oil was analyzed following the standard statistical procedure. The highest yield rhizome fresh weight (1,690.60 and 1,644.10 grams per plant respectively) was observed from line 2 and line 3 and significantly different from rhizome fresh weight of line 1 (690 grams per plant). No significant differences in quantity of volatile oil per weight were detected from various varieties and harvest times. However line 2 and line 3 showed the highest weight of volatile oil per plant which were 35.02 and 33.76 grams per plant respectively. The harvest date of 11 months gave the highest volatile oil yield (37.90 grams per plant). It was concluded that line 2 and line 3 were promising lines that provided high rhizome yield and volatile oil per plant. Results indicated that harvesting at 11 months after planting affected rhizome yield, volatile oil per plant and physical properties of volatile oil. The qualities of the oil do not meet the standard requirement of Plai oil according to TISI (Thai Industrial Standards Institute).

Keyword : Plai *(Zingiber montanum* (Koen.) Theilade), Harvest time, Volatile oil, Yield, Chemical component